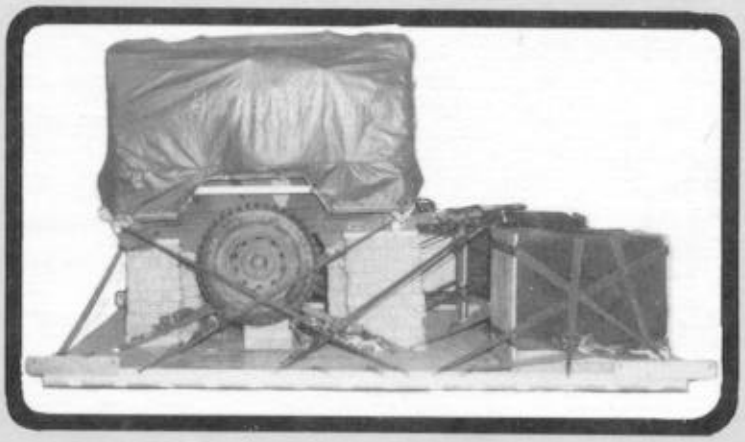
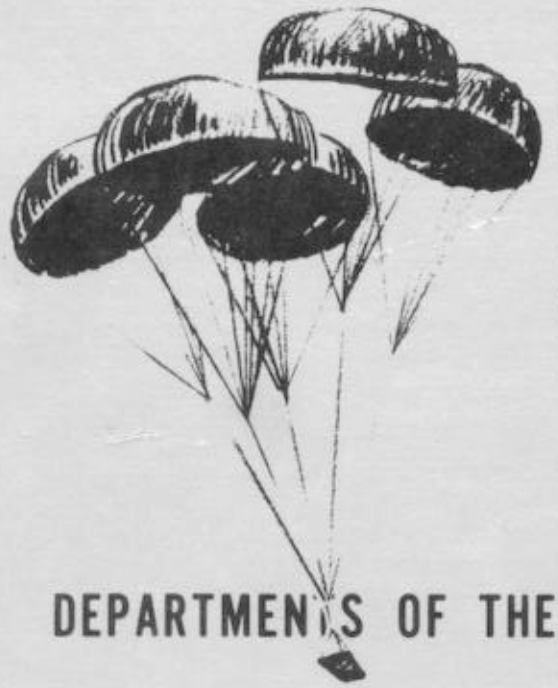
ARMY FM 10-554
AIR FORCE TO 13C7-14-491

AIRDROP OF SUPPLIES AND EQUIPMENT
RIGGING
RADIO TERMINAL SET





DEPARTMENTS OF THE ARMY AND THE AIR FORCE

FIELD MANUAL
No. 10-554
TECHNICAL ORDER
No. 13C7-14-491

DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
Washington, DC, 7 April 1982

AIRDROP OF SUPPLIES AND EQUIPMENT RIGGING RADIO TERMINAL SET

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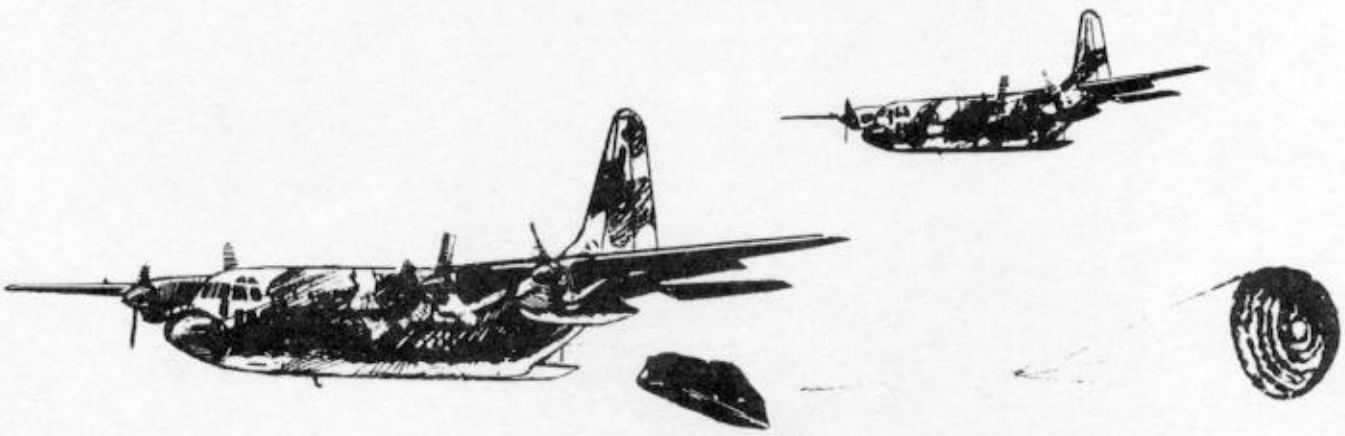

CHAPTER 1

INTRODUCTION

1-1. Scope

This manual shows and tells how to prepare and rig the V415, 1/4-ton trailer, with the AN/MRC-127 radio terminal set for low-velocity airdrop from the C-130 or the C-141 aircraft and for low-altitude parachute-extraction system (LAPES) airdrop from the C-130 aircraft.

1-2. Special Considerations

a. A copy of this manual should accompany the rigged load to the aircraft.

b. The loads covered in this manual may include hazardous material such as gasoline. When included, this item must be packaged, marked, and labeled according to AFR 71-4/TM 38-250.

1-3. Recommended Changes

You are encouraged to report any errors or omissions and suggest ways for making this a better manual. Army personnel: send your comments on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to the

Commandant
US Army Quartermaster School
ATTN: ATSM-TDT
Fort Lee, VA 23801

Air Force personnel: send your reports on AFTO Form 22 (Technical Order Publication Improvement Report).
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CHAPTER 2

RIGGING PROCEDURES

Section I
RIGGING TRAILER WITH AN/MRC-127 FOR LOW-VELOCITY AIRDROP

2-1. Description of Load

The V415, 1/4-ton cargo trailer with the AN/MRC-127 radio terminal set is rigged on a 12-foot modular platform. The load requires either two G-11A or one G-11B cargo parachute. The trailer with the AN/MRC-127 weighs 1,597 pounds. It is 107 inches long, 68 inches wide, and 87 inches high (reducible to 75.5 inches). **Note:** Trailer must be rigged with generators and antennas as accompanying load.

2-2. Preparing Platform and Installing Suspension Slings

Prepare a 12-foot modular platform as follows:

a. Inspecting Platform. Inspect, or assemble and inspect, the platform as outlined in TM 10-1670-208-20&P/TO 13C3-4-12.

b. Attaching Suspension Slings. Attach four 3-foot (3-loop) slings and four 12-foot (3-loop) slings to the platform as shown in figure 2-1.

c. Attaching and Numbering Clevises. Attach and number 24 load tiedown clevises as shown in figure 2-1.

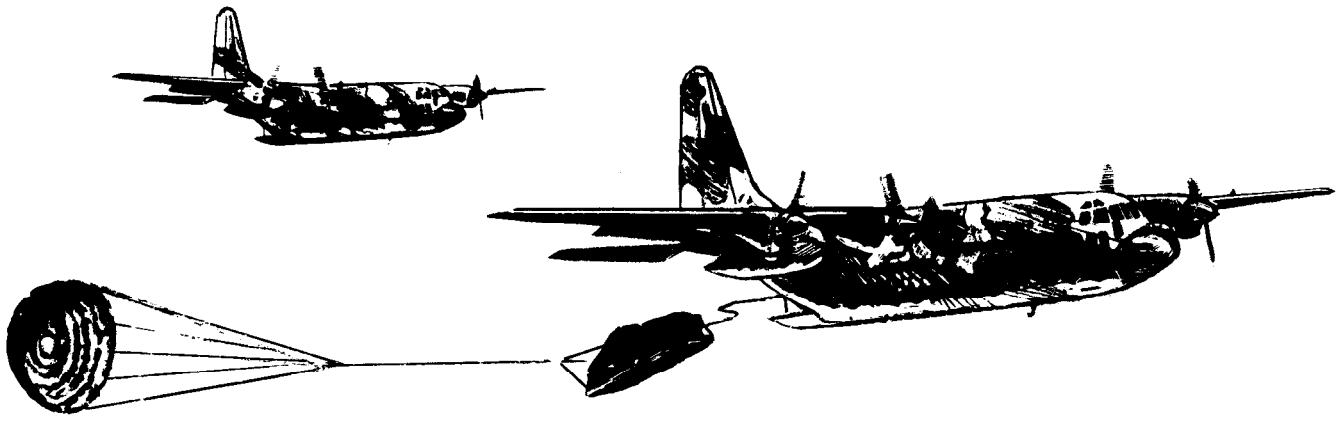
d. Positioning Load Spreaders. Position load spreaders on the platform as shown in figure 2-1.

2-3. Preparing and Positioning Honeycomb

Prepare and position honeycomb stacks as shown in figures 2-2 and 2-5.

2-4. Preparing Load

Prepare the load as follows:



a. Preparing and Positioning Generators. Check the fuel level of each generator. Each tank should be no more than three-fourths full but no less than one-half full. Prepare each generator as shown in figure 2-3 and position generator as shown in figure 2-4.

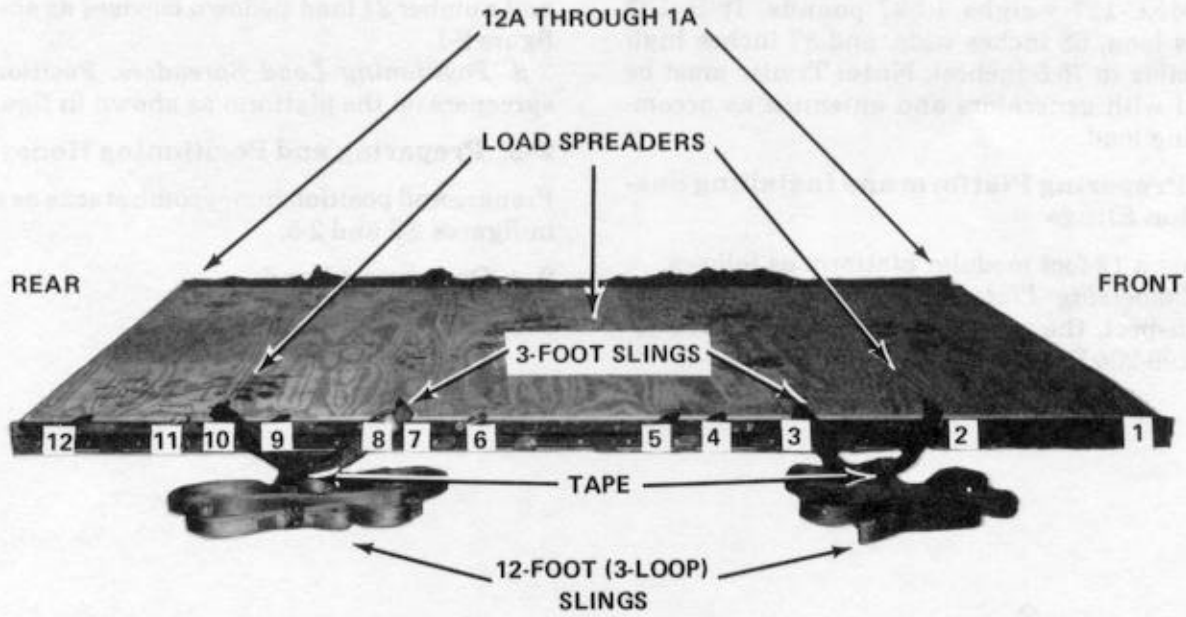
b. Lashing Generators. Lash the generator to the platform with seven tiedown assemblies as shown in figure 2-4.

c. Preparing Trailer and AN/MRC-127. Prepare the trailer as shown in figure 2-7.

d. Constructing and Installing Frame Supports. Use four pieces of 3/4-inch plywood to construct two frame supports as shown in figure 2-6 (double each support piece). Install the two frame supports as shown in figure 2-7.

2-5. Positioning Trailer

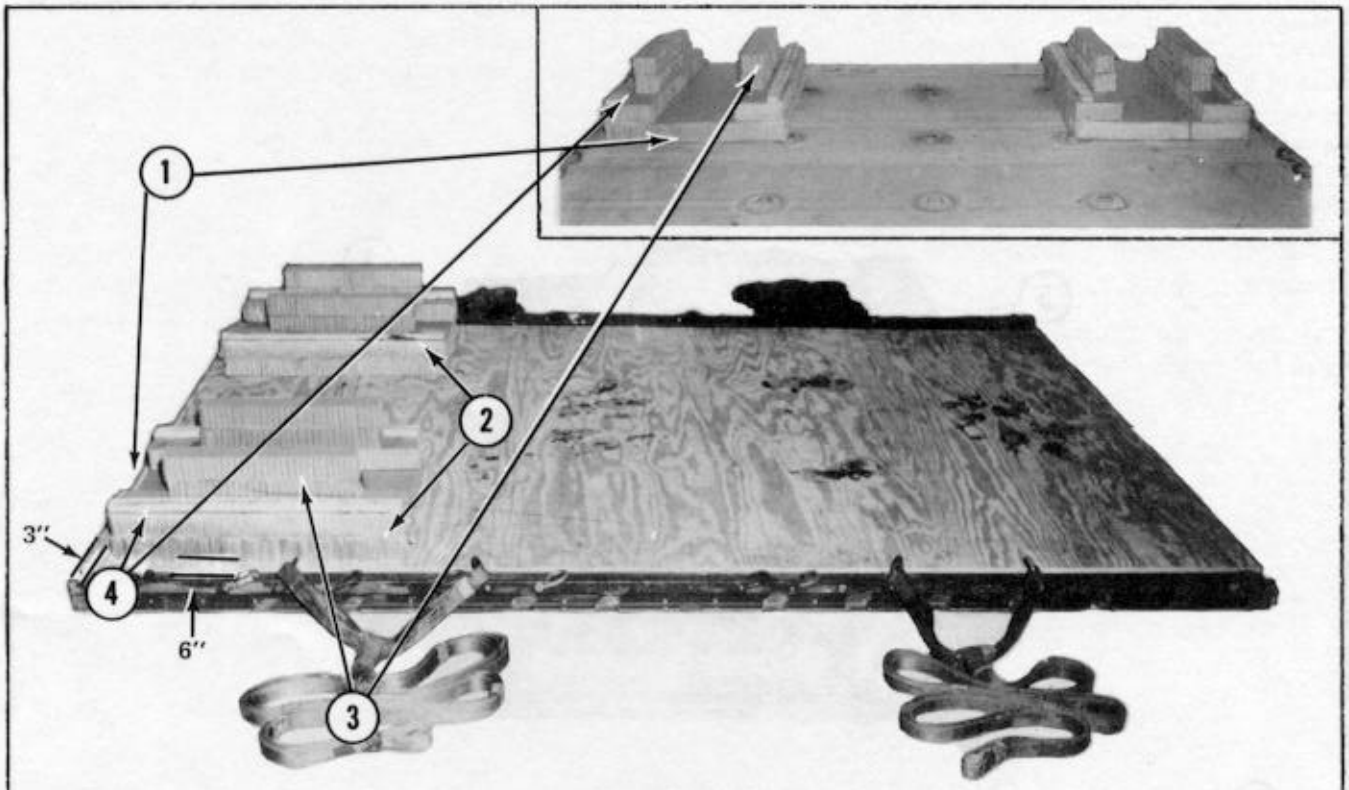
Set the trailer on the platform with the rear of the trailer flush with the front edge of honeycomb stack number 1. Raise the support leg and tie with type III nylon cord.



(1) Pass a 3-foot sling through the loop of each 12-foot sling. Fit a tiedown clevis on both ends of each 3-foot sling; pull the keepers on the 12-foot slings tight against the 3-foot slings and tape the slings together. Bolt the tiedown clevises to the 6th and 9th clevis holes (counting from the front of the platform) in each rail for the front slings and the 17th and 21st clevis holes for the rear slings.

(2) Start at the front of each rail and bolt a tiedown clevis to the 2d, 11th, 12th, 16th, 18th, 20th, 21st, 22d, and 24th holes. Start at the front of the platform and number the clevises bolted to the right rail from 1 to 12 and those bolted to the left rail from 1A to 12A.

Figure 2-1. Platform prepared and suspension slings installed.



Build each generator honeycomb stack as follows:

(1) One 27- by 36-inch piece of honeycomb (6 inches from the side and 3 inches from the rear edge of the platform).

(2) Two 7- by 36-inch pieces of honeycomb, one piece on each edge of the base.

(3) Four 3 1/2- by 22-inch pieces of honeycomb. Place two pieces on top of each 7- by 36-inch piece of honeycomb.

(4) Two 3/4- by 2- by 36-inch pieces of plywood. Place one piece of plywood on top of each 7- by 36-inch piece of honeycomb.

Figure 2-2. Generators honeycomb stacks positioned.

2-6. Lashing Trailer

Lash the trailer to the platform with 12 tiedown assemblies as shown in figure 2-8.

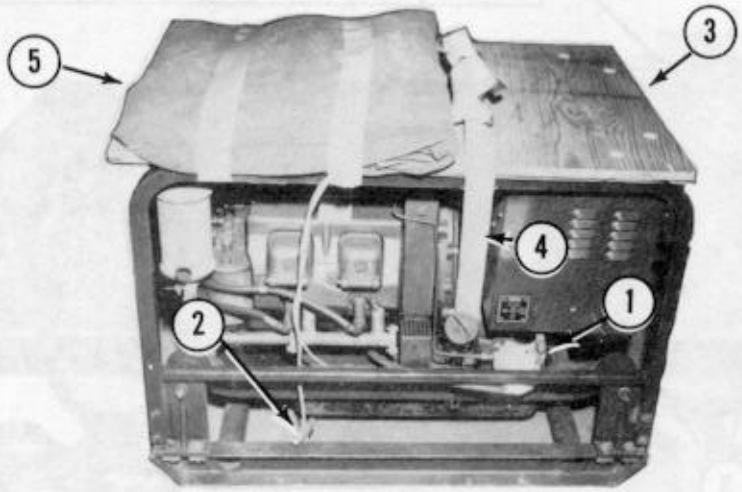
2-7. Safetying Suspension Slings

Make safety ties on the suspension slings as shown in figure 2-11.

2-8. Stowing Cargo Parachutes

a. Build a parachute stowage platform according to details in figure 2-9.

b. Install the parachute stowage platform as shown in figure 2-10.



(1) Empty the fuel bowl and tape it in place.

(2) Make sure the starter rope is on each generator.

(3) Place a 3/4- by 24- by 35-inch piece of plywood on top of each generator.

(4) Run a 15-foot tiedown strap under the mainframe of each generator and bind the ends together on top of the plywood.

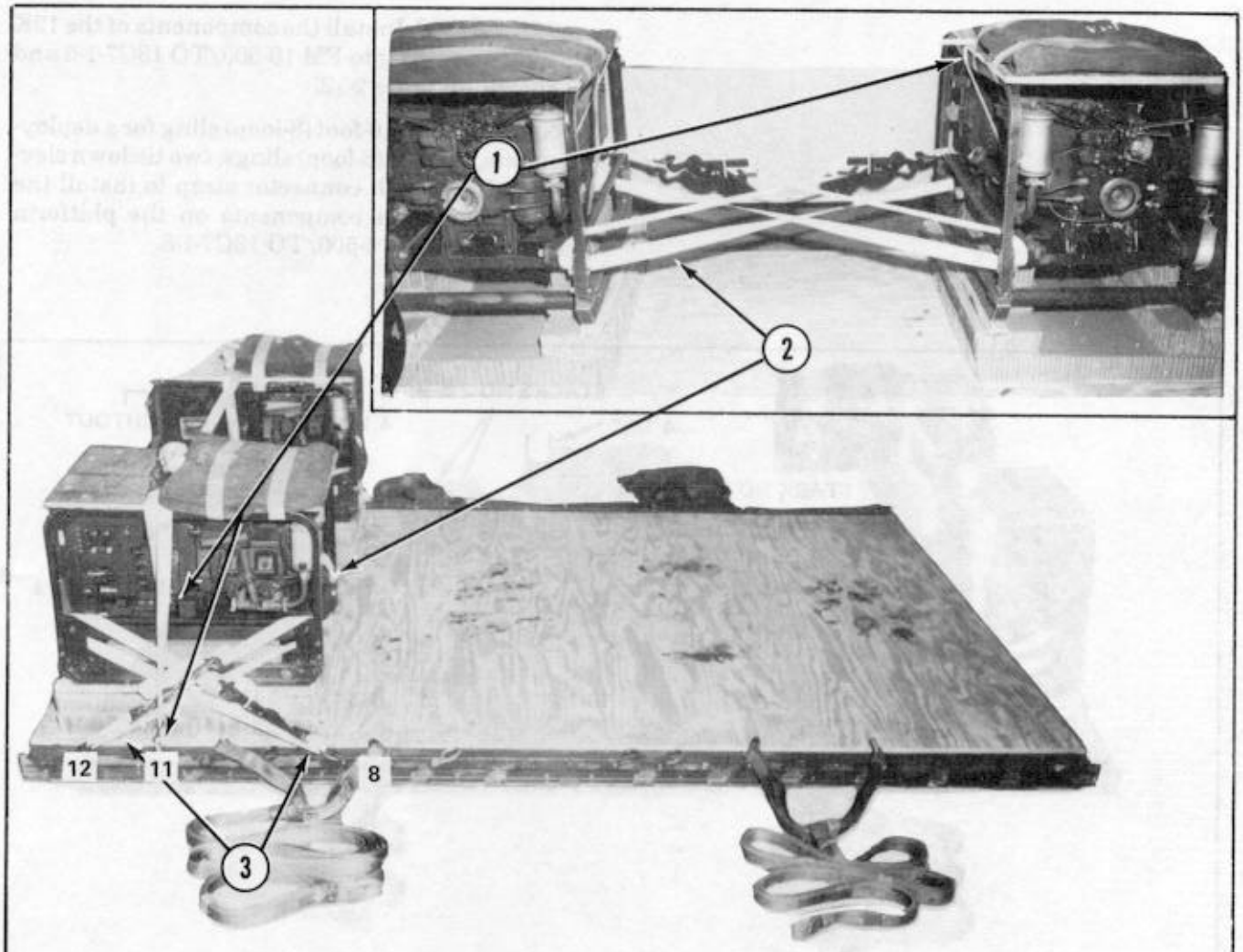
(5) Tape generator cover on top of plywood.

Figure 2-3. Preparing generator.

c. Prepare and stow two G-11A or one G-11B cargo parachutes as outlined in FM 10-500/TO 13C7-1-5 and as shown in figure 2-12.

2-9. Installing Extraction System

One of two extraction systems may be used when this load is rigged, the 12K extraction force transfer coupling (platform) (12K PEFTC) system or the static line connector strap (SL/CS).



(1) Fit a 15-foot tiedown strap to clevis 11 by passing the end of the strap through the clevis and then through its own D-ring. Run the strap, over the top of the two generators, to clevis 11A and bind with a D-ring and load binder. Note: Close the lashing bindings in steps 2, 3, and 4 at the same time to prevent the generators from shifting.

(2) Pass a tiedown strap from the left front corner of one generator to the right rear corner of the other generator. Bind the end with a D-ring and load binder. Reverse the procedure for the other strap shown.

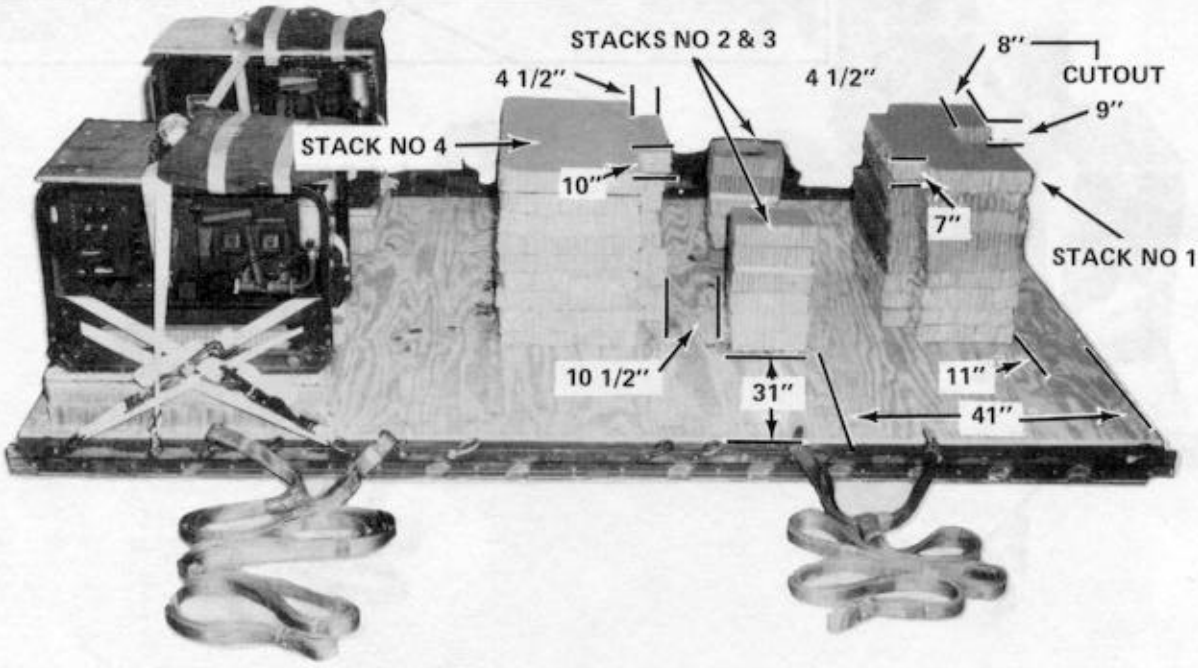
(3) Pass the straps from clevis 8 through the right rear corner of the generator frame and bind its ends with a D-ring and load binder. Pass the strap from clevis 12 through the right front corner of the generator frame and bind its ends with a D-ring and load binder.

(4) Pass two straps the same for the left side of the platform as indicated in 3 above (not shown).

Figure 2-4. Lashing generators.

a. 12K PEFTC. Install the components of the 12K PEFTC according to FM 10-500/TO 13C7-1-5 and as shown in figure 2-12.

b. SL/CS. Use a 16-foot (3-loop) sling for a deployment line, two 9-ft (3-loop) slings, two tiedown clevises, and a 60-inch connector strap to install the extraction system components on the platform according to FM 10-500/TO 13C7-1-5.



STACK NO	PIECES	WIDTH (INCHES)	LENGTH (INCHES)
1	9	17	36
2 & 3	6	8	12
Place one 3/4- by 8- by 12-inch piece of plywood under the top two layers of honeycomb in each stack.			
4	9	24	41

Figure 2-5. Honeycomb positioned.

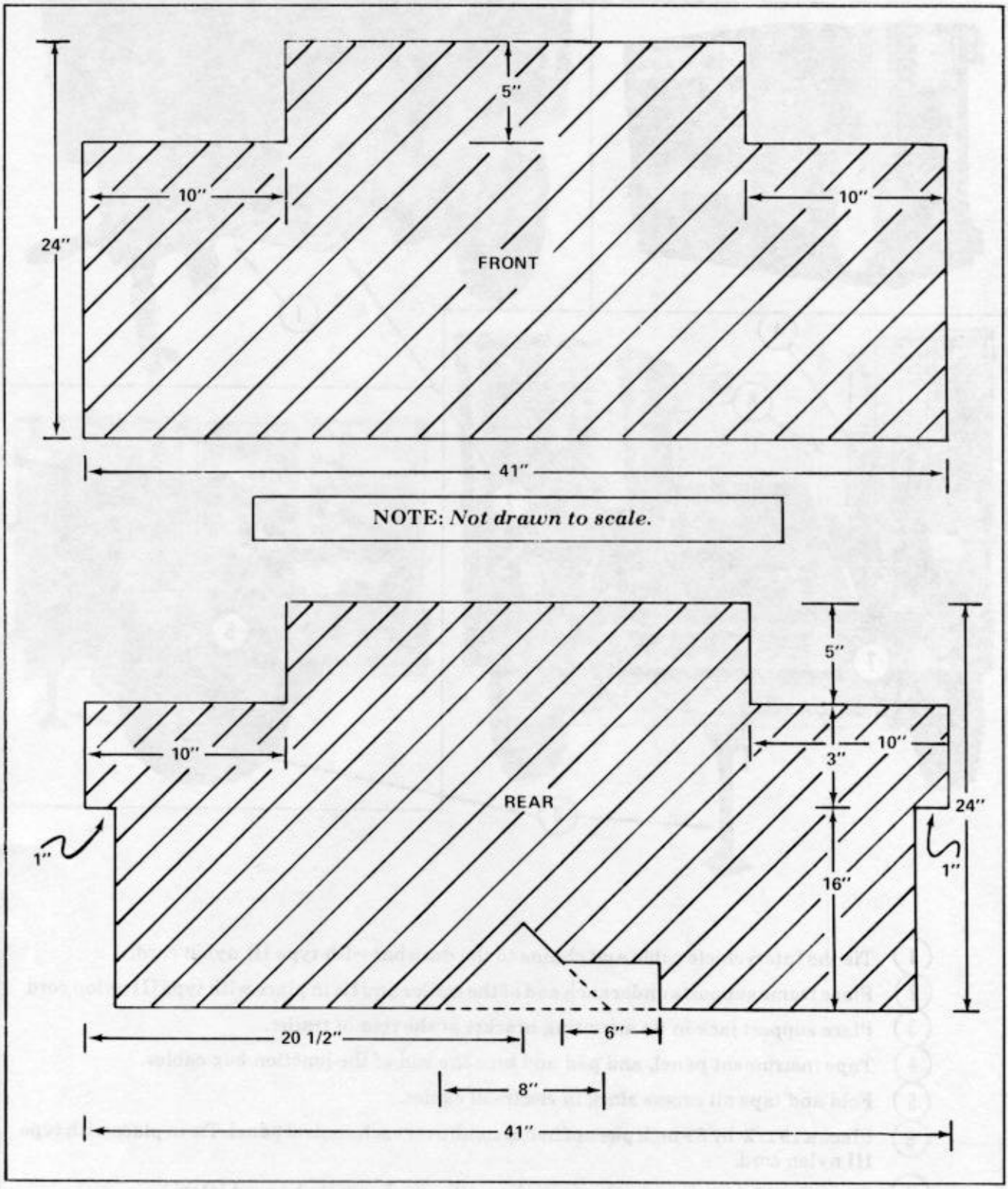
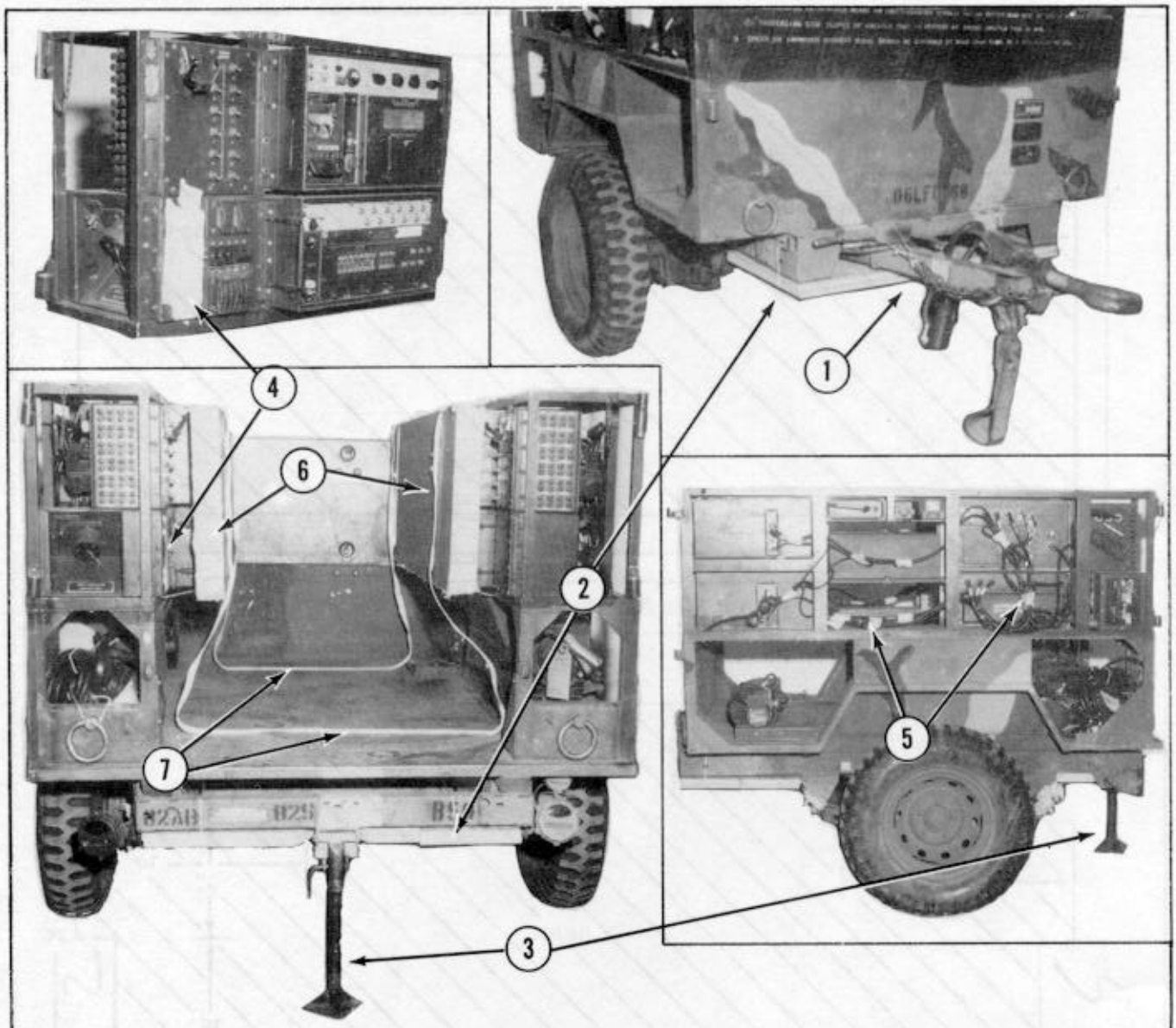
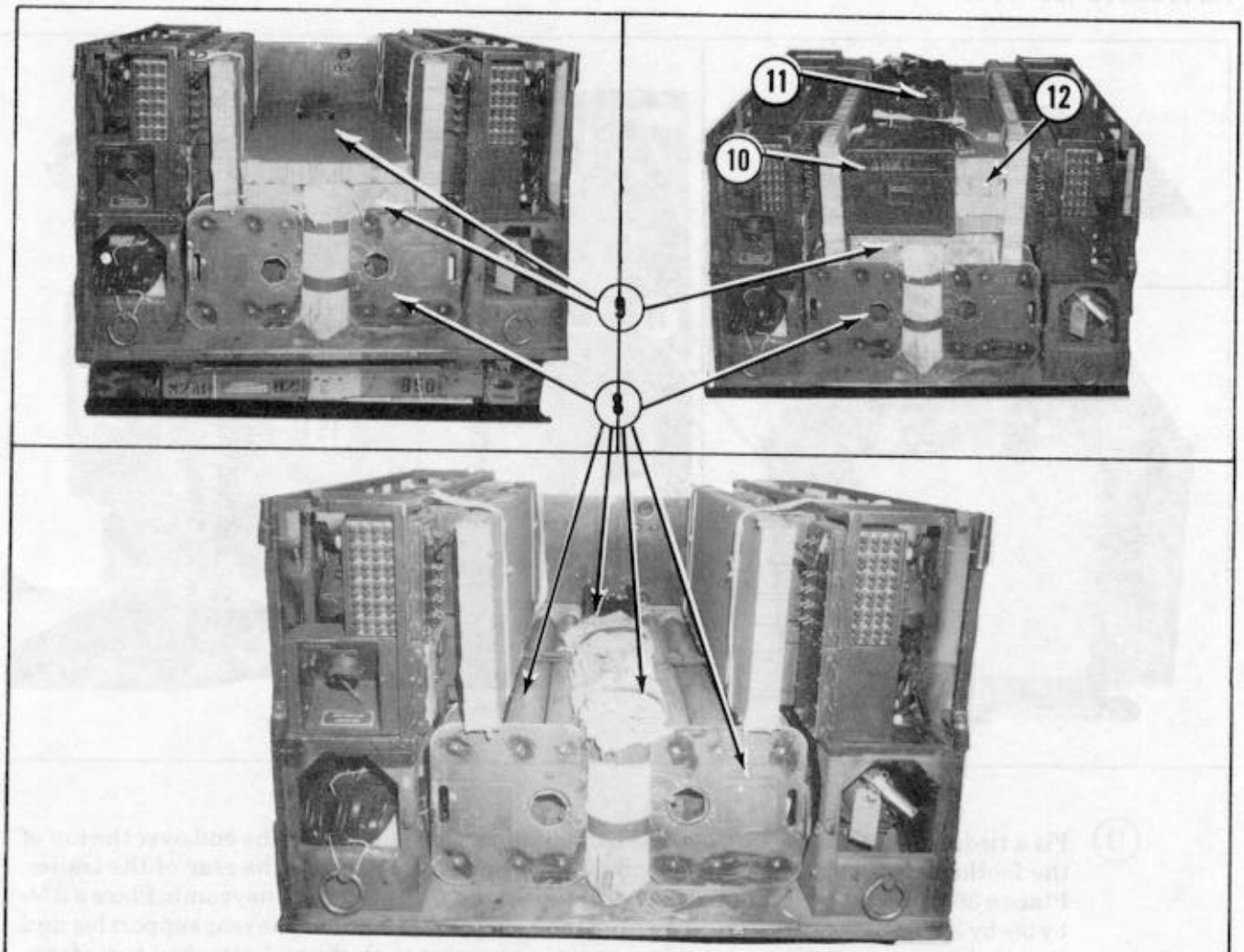


Figure 2-6. Frame support construction details



1. Tie the intervehicle cable and chains to the drawbar with type III nylon cord.
2. Place frame supports under each end of the trailer and tie in place with type III nylon cord.
3. Place support jack in its mounting bracket at the rear of trailer.
4. Tape instrument panel, and pad and tape the end of the junction box cables.
5. Fold and tape all excess slack in electrical cables.
6. Place a 19 1/2- by 69-inch piece of honeycomb over each control panel. Tie in place with type III nylon cord.
7. Place two 15-foot tiedown straps in the trailer as shown (to be used later).

Figure 2-7. Preparing trailer.



(8) Place two antenna mast holders, three padded 5-gallon water cans (two fuel cans and one water can) and the AC power cord roll on the floor of the trailer.

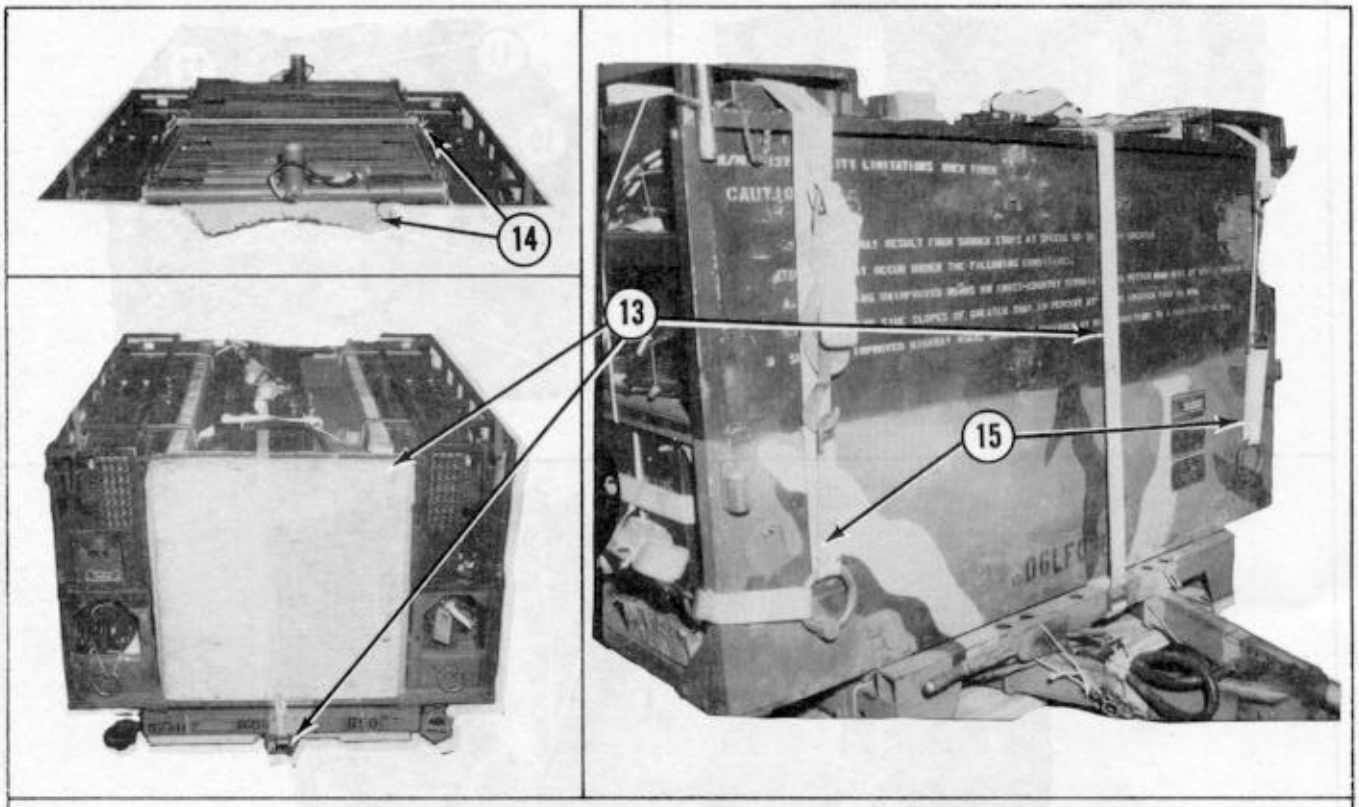
(9) Place two 8- by 69-inch pieces of honeycomb on top of the antenna mast holders. Place one 23- by 69-inch piece of honeycomb (with a 7- by 24-inch cutout) on top of the two 8- by 69-inch pieces of honeycomb.

(10) Place the BC-5 footlockers (with contents padded) end to end on top of the 23- by 69-inch piece of honeycomb. Construct one 2 1/4- by 4- by 12-inch wooden spacer from three layers of 3/4-inch plywood. Place the spacer between the front wall of the trailer and the front footlocker (not shown).

(11) Pad shovel, ax, and pick, then place them to the right of the footlockers (not shown). Tie them to the tiedown ring on the inside of the forward wall of the trailer with type III nylon cord. Place grouping rods on top of footlockers.

(12) Use scrap honeycomb as a filler between the footlockers and the honeycomb of the right side panel. Bind the two tiedown straps described in step 7.

Figure 2-7. Preparing trailer (continued).

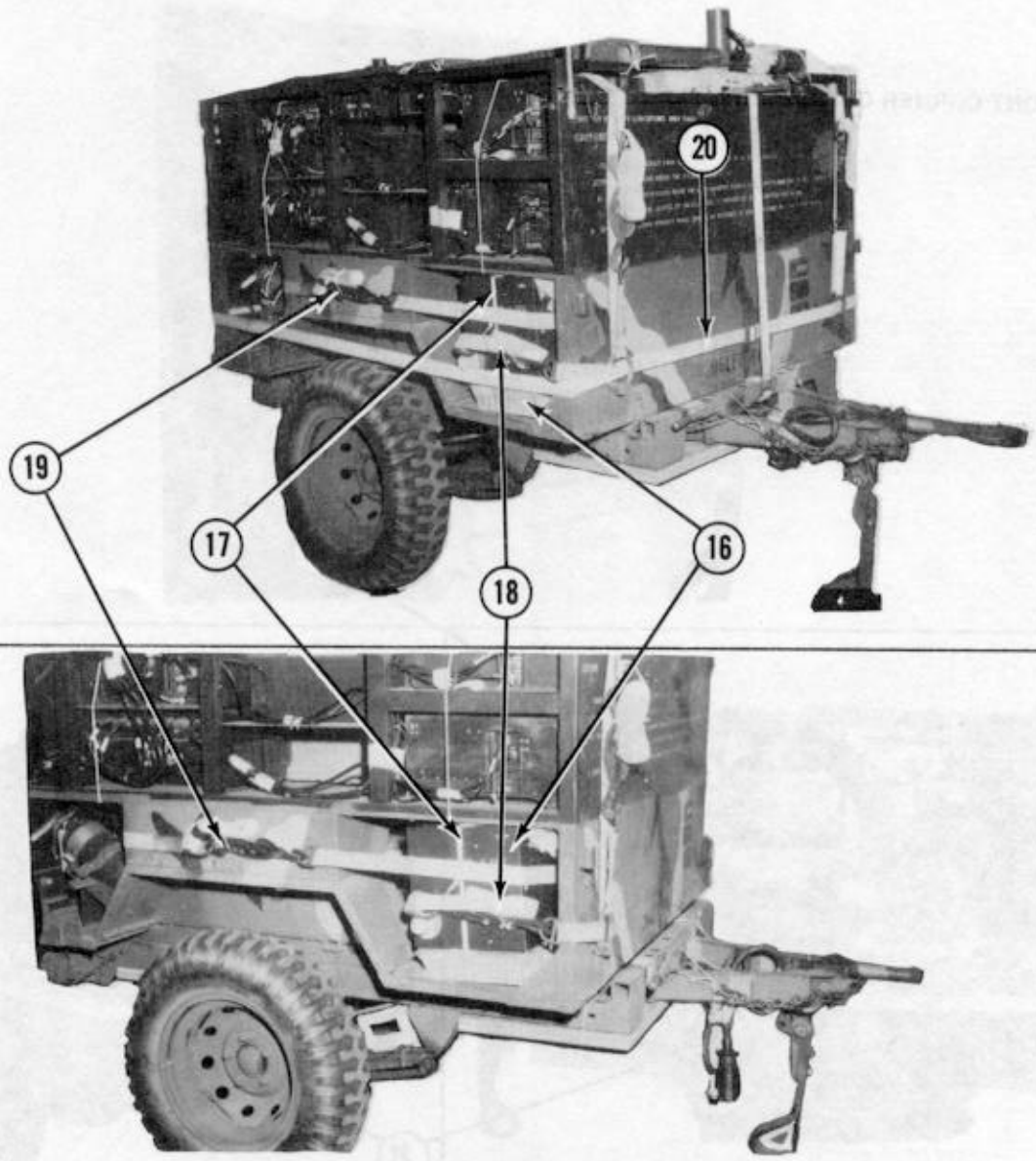


(13) Fit a tiedown strap to the brace at the front of the trailer, then pass the end over the top of the footlockers. Place a 22- by 25-inch piece of honeycomb across the rear of the trailer. Place a 36- by 36-inch piece of honeycomb against the first piece of honeycomb. Place a 3/4- by 36- by 36-inch piece of plywood against the honeycomb. Remove the rear support leg and fit a tiedown strap to the support leg mounting bracket with the end attached to tiedown strap coming from the front of the trailer.

(14) Pad the top of the footlockers with cellulose wadding. Place antennas on top of wadding and tie in place with type III nylon cord.

(15) Run a tiedown strap back from brace on top of the left and right shelf to the front left and right tiedown rings. Bind the end of each strap with a D-ring and load binder.

Figure 2-7. Preparing trailer (continued).



(16) Place a 12- by 12- inch piece of honeycomb in lower right front compartment. Place heater on top of honeycomb.

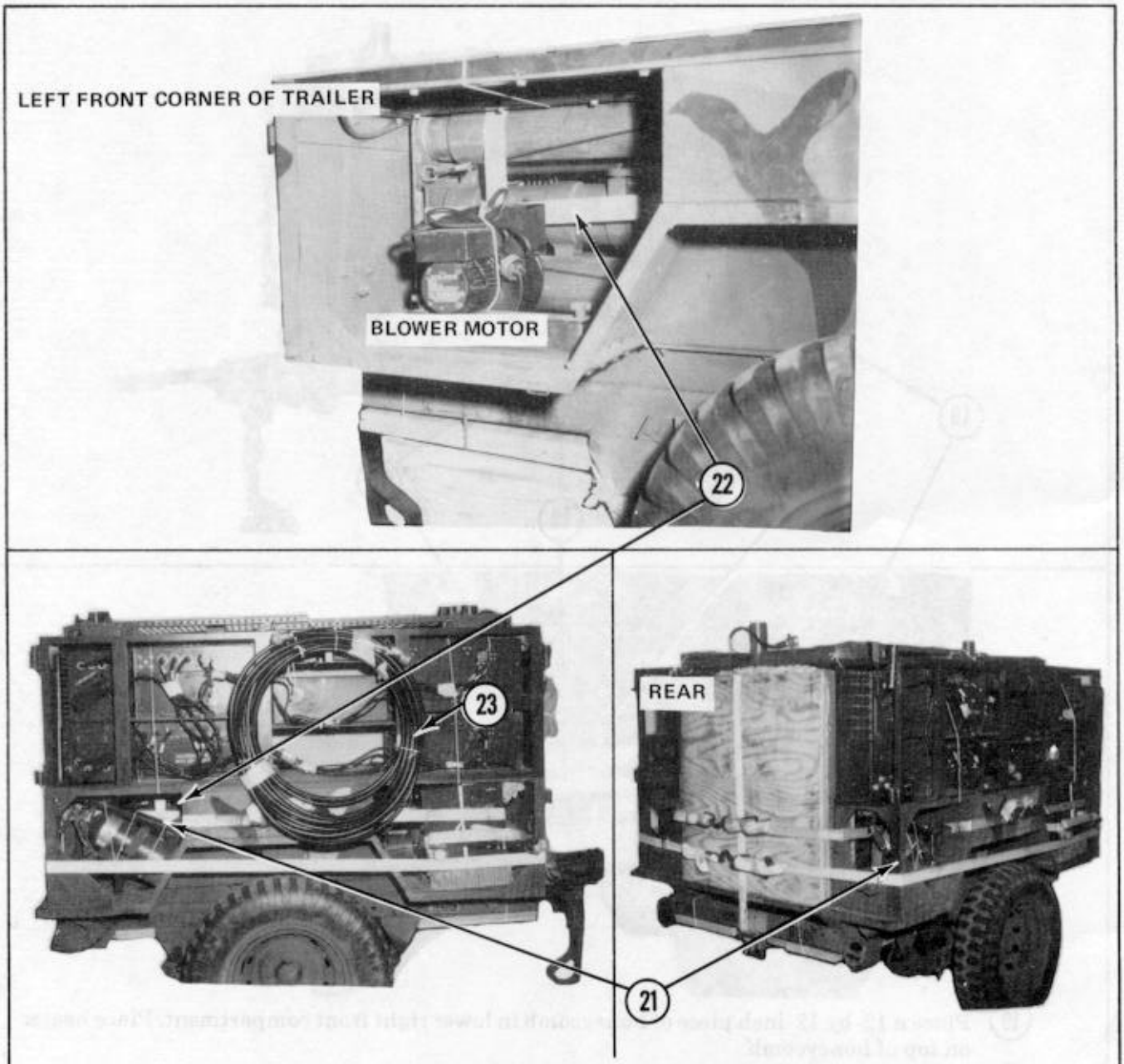
(17) Tie a length of 1/2-inch tubular nylon cord around the heater and the antenna masts, then pad and tape heater as necessary.

(18) Run a tiedown strap around the heater and shelf bracing at rear of the heater, then pass the strap through the tiedown ring at the right front corner of the trailer.

(19) Run another strap around the heater, shelf bracing and the storage compartment located over the right fender.

(20) Pass a 30-foot tiedown strap completely around the trailer. Make sure that the strap runs through the tiedown rings at each corner of the trailer.

Figure 2-7. Preparing trailer (continued).



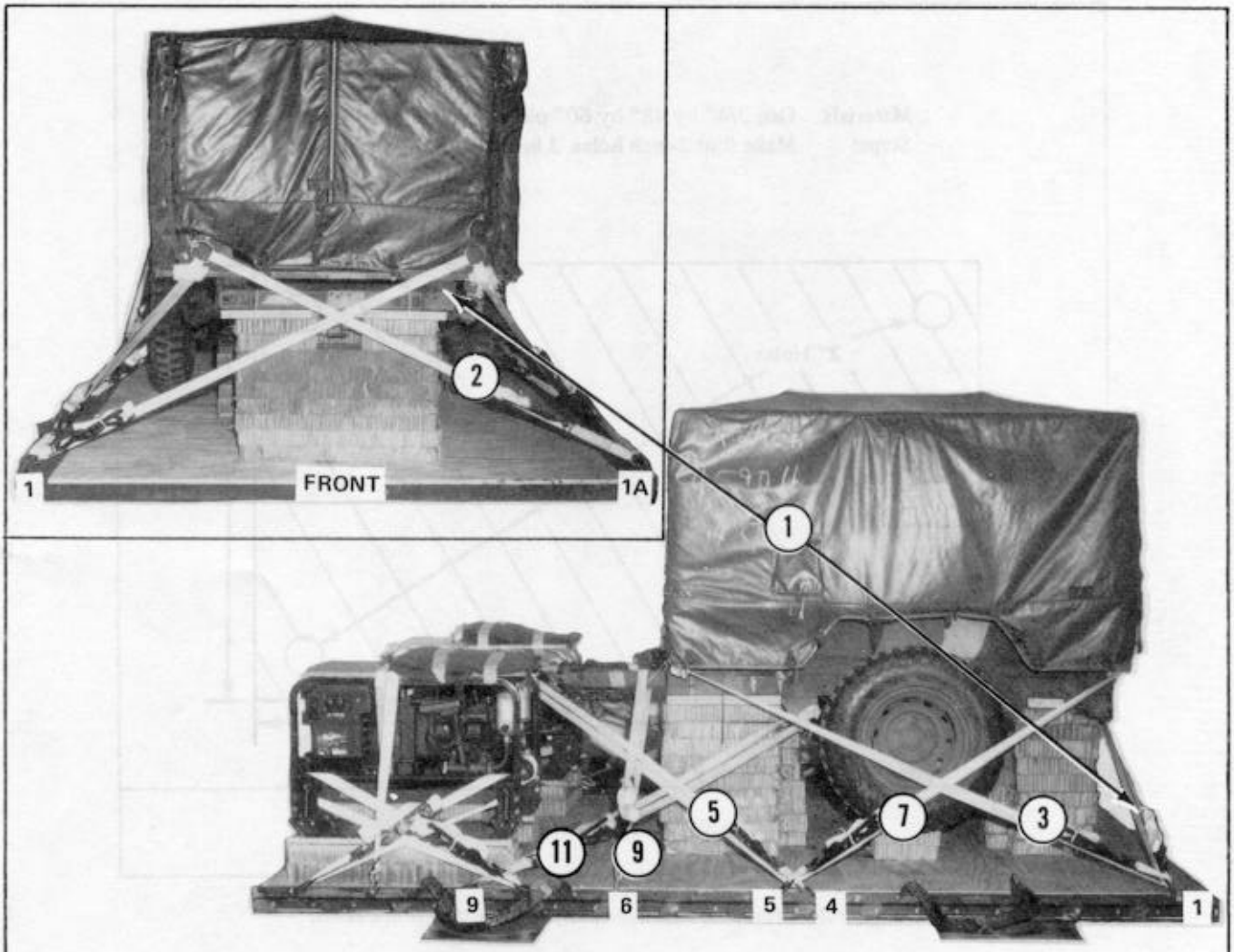
(21) Remove and place support leg in the compartment with the fire extinguisher and tie with type III nylon cord.

(22) Pass another 30-foot tiedown strap across the trailer behind the front wall. Run the ends of the strap through the handles of the antenna masts at the front of the trailer and the panel support at the rear of the trailer. Bind the strap at the rear of the trailer with a load binder and two D-rings.

(23) Tie a roll of cable to each side of the trailer with type III nylon cord.

(24) Lower the frame and cover to the travelling position and secure them in place (not shown).

Figure 2-7. Preparing trailer (continued).



Lashing No.	Clevis No.	Instructions
1	1	Through right rear tiedown ring
2	1A	Through left rear tiedown ring
3	1	Through left front tiedown ring
4	1A	Through right front tiedown ring
5	4	Through lunette
6	4A	Through lunette
7	5	Through left rear tiedown ring
8	5A	Through right rear tiedown ring
9	6	Around left drawbar
10	6A	Around right drawbar
11	9	Through left front spring shackle
12	9A	Through right front spring shackle

Figure 2-8. Lashing trailer.

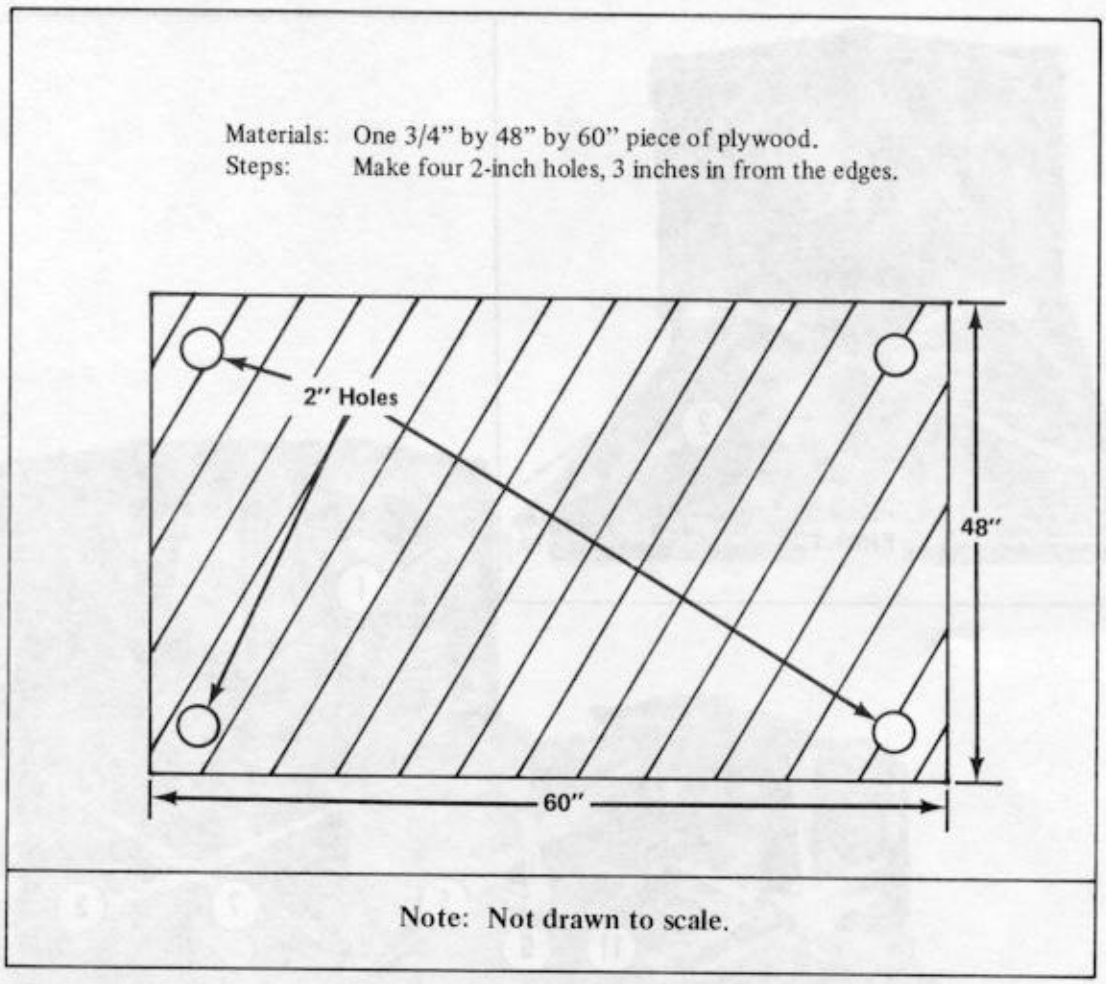


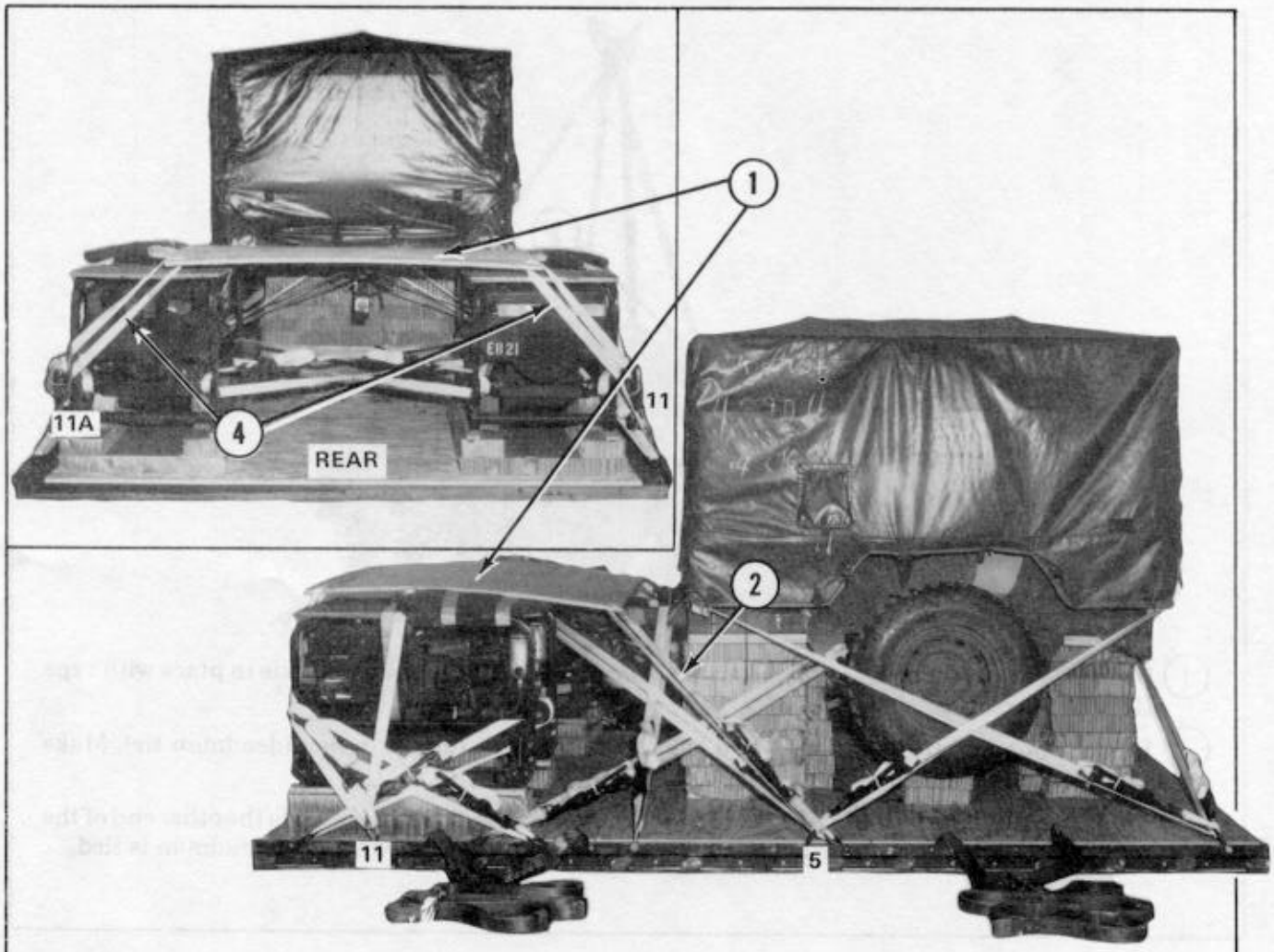
Figure 2-9. Parachute stowage platform construction details.

2-10. Installing Release System

CAUTION

Only the M-1 release is authorized for use with the G-11B cargo parachute.

Prepare, attach, and safety an M-1 cargo parchute release according to FM 10-500/TO 13C7-1-5. If the M-1 release is not available, use two 5,000-pound releases as outlined in FM 10-500/TO 13C7-1-5.



(1) Place the stowage platform on top of generators with its rear edge flush with the rear edge of the airdrop platform.

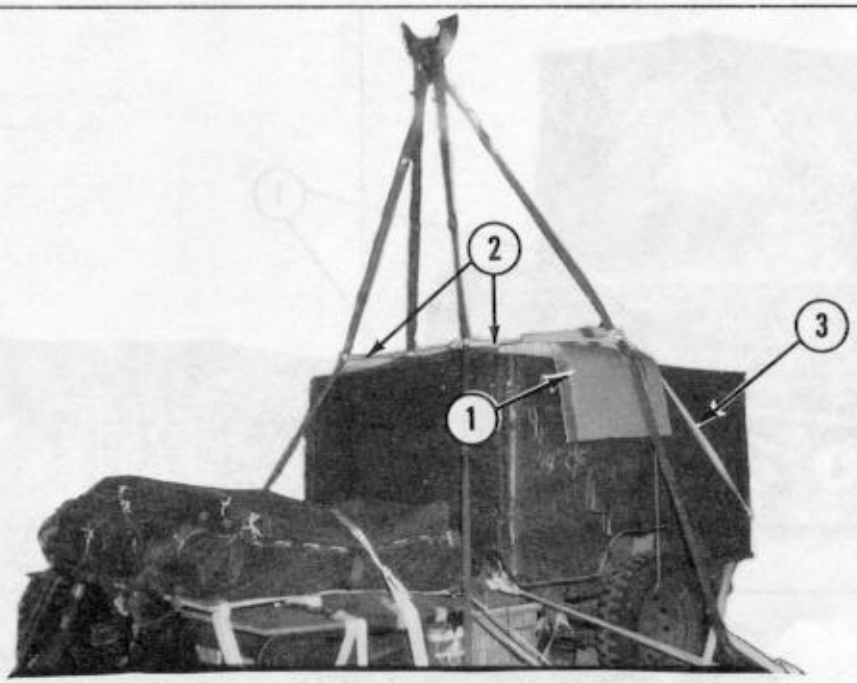
(2) Run a 15-foot tiedown strap through the hole in right front corner of the stowage platform and through load tiedown clevis 5. Fit a D-ring to the free end of the strap and hook the D-ring together with a load binder.

(3) Run a second strap through the left front hole and clevis 5A as in 2 above.

(4) Run two more straps through the rear holes and clevises 11 and 11A as in 2 above.

(5) Pull each strap taut and close its binder. Fold the excess strap and tie the folds to the binder with 80-pound cotton webbing.

Figure 2-10. Stowage platform secured.



(1) Bend a 24- by 36-inch piece of honeycomb over each side of the trailer and tie in place with type III nylon cord.

(2) Raise slings and tie slings with two lengths of 1/2-inch tubular nylon (deadman tie). Make deadman tie as shown in FM 10-500/TO 13C7-1-5.

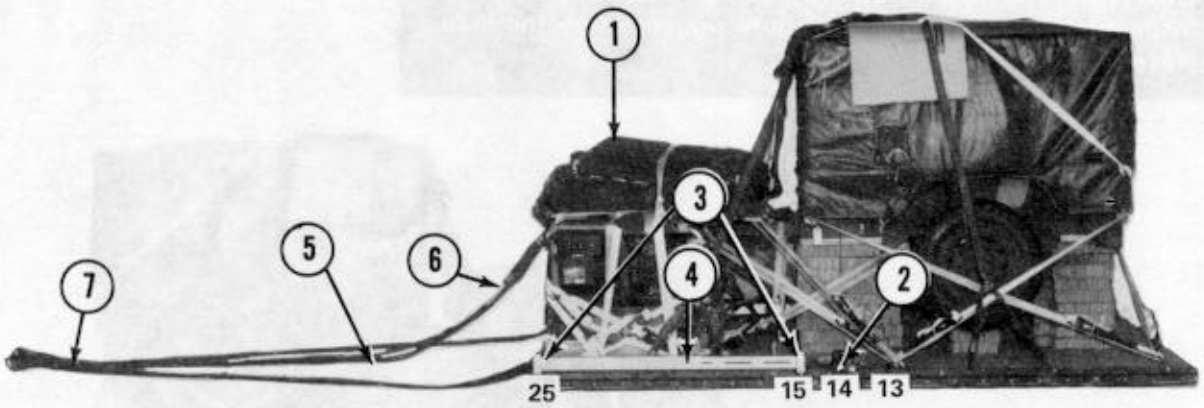
(3) Tie a length of type VIII nylon webbing to each rear corner tiedown ring. Tie the other end of the webbing to the front suspension slings on each side at the point where the deadman is tied.

Figure 2-11. Safetying suspension slings.

2-11. Positioning Extraction Parachute

a. C-30 Aircraft. Place a 15-foot reefed cargo extraction parachute on the load for installation in the aircraft.

b. C-141 A Aircraft. Place a 15-foot reefed cargo extraction parachute with a 260-inch reefing line on the load for installation in the aircraft. The parachute needs a 120-foot (3-loop) type XXVI nylon webbing extraction line. Form the line according to FM 10-500/TO 13C7-1-5.



1. Prepare and position two G-11A cargo parachutes.
2. Bolt a 12K PEFTC actuator to the 13th and 14th clevis holes in each rail.
3. Bolt a guidance tube bracket to the 15th and 25th clevis holes in each rail.
4. Bolt the four guidance tubes to their brackets.
5. Use a 16-foot (3-loop) sling as the deployment line.
6. Fold the excess deployment line and tape the folds in place with two turns of adhesive tape.
7. Tape the deployment line and the extraction bridle together, just forward of the coupling link.

Figure 2-12. Parachute and PEFTC installed.

c. C-141B Aircraft. Place a 15-foot reefed cargo extraction parachute with a 260-inch reefing line, a type IV link, a 36-inch adapter web and a 160-foot (2-ply) type XXVI nylon extraction line on the load for installation in the aircraft.

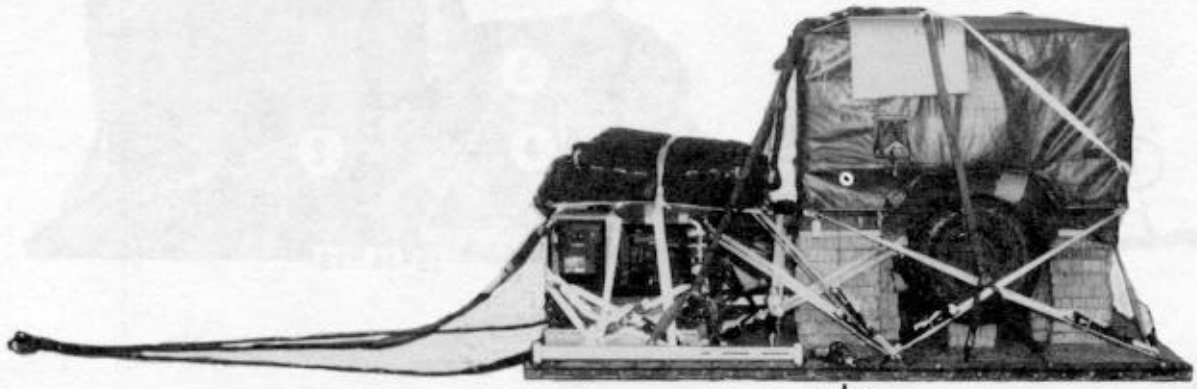
CAUTION:

The extraction line will be a continuous 160-foot (2-ply) type XXVI nylon extraction line. Shorter lines will NOT be used to form the 160-foot extraction line.

2-12. Marking Rigged Load

Use data shown in figure 2-13 and mark the rigged load according to FM 10-500/TO 13C7-1-5.

CAUTION: The rigged load **MUST** be given a complete final inspection by a qualified parachute rigger before the load leaves the rigging site.



RIGGED LOAD DATA

*Weight	4,590	Pounds
Height	87	Inches
Width	108	Inches
Length	144	Inches
Center of Balance (From the forward edge of the platform)	74	Inches
Extraction System (as shown)	PEFTC	

*This weight is based on two G-11A parachutes.

Figure 2-13. Rigged load for low-velocity airdrop.

2-13. Equipment Required

The equipment required to rig this load is listed in table 2-1. This table also includes the equipment required for stowing the accompanying equipment.

Table 2-1. Equipment required for rigging trailer with AN/MRC-127 for low-velocity airdrop.

National Stock No.	Item	Quantity
1670-00-040-8215	Adapter Web, 36-in (for C-141B)	1
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1377-00-958-1048	Cartridge, time-delay, 20-second (Use with 5,000-lb release)	2
1670-00-090-5354	Clevis Assembly, suspension, large	3
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-168-6068	*Coupling, extraction force transfer (platform)	1
8135-00-664-6958	Cushioning Material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2- by 6- by 6-in	1
1670-00-856-0265	Line, extraction, 60-ft (1-loop) (for C-141)	1
1670-01-107-7652	Line, extraction, 160-ft (1-loop) (for C-141B)	1
1670-00-783-5988	Link Assembly, type IV (for C-141)	1
1670-00-217-2421	Link, L-bar type	2
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in:	15 sheets
	3 1/2- by 22-in	(4)
	7- by 26-in	(2)
	8- by 12-in	(6)
	8- by 69-in	(2)
	12- by 12-in	(1)
	17- by 36-in	(9)
	19 1/2- by 68-in	(2)
	22- by 25-in	(1)
	23- by 69-in	(1)
	24- by 36-in	(2)
	24- by 41-in	(2)
	27- by 36-in	(1)
	36- by 36-in	(1)
	36- by 41-in	(9)
	Parachute:	
1670-00-269-1107	cargo, G-11A	2
	or	
1670-01-016-7841	cargo, G-11B	1
1670-00-052-1548	cargo extraction, 15-ft	1
	Platform, airdrop, modular, 12-ft	1
1670-00-893-1631	Clevis, load tiedown	24
1670-00-893-1624	Panel	3
1670-00-893-1626	Rail, platform side, 12-ft	2
5320-00-893-1632	Rivet, blind-drive type, 1/4-in diam	48
5530-00-128-4981	Plywood, 3/4-in:	
	2- by 36-in	(2)
	8- by 12-in	(2)
	24- by 36-in	(2)
	24- by 41-in	(4)
	36- by 36-in	(1)
	48- by 60-in (stowage platform)	(1)
	48- by 96-in (load spreaders)	(3)
1670-00-168-6070	Release, cargo parachute, (Two 5,000-lb releases, NSN 1370-00-799-8494, may be used with G11A cargo parachutes.)	1

Table 2-1. (Continued)

National Stock No.	Item	Quantity
	Sling, cargo, A/D:	
1670-00-753-3788	3-ft (3-loop) (Add two for 5,000-lb rel)	4
1670-00-823-5041	12-ft (3-loop)	4
1670-00-823-5042	16-ft (3-loop) (deployment line)	1
1670-00-753-3794	20-ft (2-loop) (riser extensions)	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown Assembly, 10,000-lb	28
1670-00-937-0272	Binder, load	(28)
5365-00-937-0147	D-ring, 10,000-lb	(28)
1670-00-937-0273	Strap, 15-ft (Dacron)	(28)
	Webbing:	
8305-00-268-2411	cotton, 80-lb	As required
8305-00-082-5752	nylon, tubular, 1/2-in	As required
8305-00-263-3591	nylon, type VIII	As required
*When this item is not available, the following items are needed for the SL/CS extraction system:		
1670-00-090-5354	Clevis Assembly, suspension, large	3
1670-00-893-1631	Clevis, load tiedown	2
1670-00-783-5988	Link Assembly, type IV	1
1670-00-753-3790	Sling, cargo, A/D, 9-ft (2-loop)	2
1670-00-998-0117	Static Line, cargo parachute, breakaway-type with release knife and clevis	2
1670-00-738-5878	Strap, connector, 60-in	1

APPENDIX

REFERENCES

AFR 71-4/TM 38-250	Packaging and Materials Handling: Preparation of Hazardous Materials for Military Shipment
FM 10-500/TO 13C7-1-5	Airdrop of Supplies and Equipment: General Information for Rigging Airdrop Platforms
TM 10-1670-208-20&P/ TO 13C3-4-12	Organizational Maintenance Manual (Including Repair Parts and Special Tools List) for Platforms, Type II Modular and LAPES/ Airdrop Modular

FM 10-554/TO 13C7-14-491

7 APRIL 1982

By Order of the Secretaries of the Army and the Air Force:

E. C. MEYER
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Brigadier General, United States Army
The Adjutant General

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